Career Counselling Chatbot on Facebook Messenger using AI

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Abstract: Work instructions have always been necessary, but in recent times they have only gained the respect they deserve and now that they are in high demand and available worldwide, it is important to have a simple understanding of the various tasks that need to be done. Career counsellors are responsible for providing high school students with the experience and skills they need to make informed career decisions, education, and long-term goals. Music; It is a social event that unites people regardless of market, age, history, language, interests, political affiliation and income. Music and streaming apps are in demand because they are versatile and compatible with daily life, travel, sports and other activities. The rise of mobile phones and digital multimedia technology has made digital music a consumer favourite for many young people. Although career orientation has always been important, it has recently become widely recognized as a key element in today's career change research. High school students, in particular, need early and sustained exposure to many popular careers around the world. This information allows them to make decisions that patiently pursue their educational preferences. Music is a unifying force that transcends borders and barriers and plays a special role in this field. Music and streaming services are integrated into daily life, travel and entertainment, resulting in a universal love of music. The growth of mobile phones and digital technology has brought digital music even more to the forefront of youth content. However, many students do not have enough guidance to bridge the gap between their education, passions, and future career goals. This often leads to frustration and inability to take action. To meet this need, our web career counselling program, based on the ASP.NET Framework, provides students with career planning tools, skills development and opportunity guidance through a Google Dialog flow-powered counselling chatbot. By exploring music as a potential career path and leveraging its global appeal, we aim to inspire and guide students into a successful and rewarding career.
Keywords: ASP.NET, communication flow, consulting, NLP

I. INTRODUCTION

Choosing a career path can be daunting, especially for high school graduates facing their first major life decision. Many students feel pressured by parents and uncertain about their own interests, often leading to regrets down the line. A recent study revealed that a significant number of university students wished they had chosen a different course, often due to limited information or parental influence.

To bridge this gap, our web platform provides a comprehensive career guidance system for students exploring various fields. We recognize that many lack the time or resources for thorough research, so we offer a one-stop resource with:

* Detailed college information: Including profiles, locations, and Course offerings.
* Self-assessment quizzes: Help students identify their skills and Interests.
* Competitive exam resources: Guide preparation and application.
* Interactive forum: For addressing technical questions and sharing experiences.
* College prediction tools: Offer personalized recommendations based on individual profiles.

Counselling chatbot: Available for real-time support and query resolution. By consolidating these resources in one easily accessible platform, we aim to empower students to make informed decisions for a fulfilling future. Our goal is to equip them with knowledge and support, minimizing uncertainty and paving the way for a successful career journey.

Changes Made:

* Clearer opening: States the problem and target audience directly.
* Concise structure: Removed redundancy and streamlined the information flow.
* Improved sentence variety: Added rhythm and interest to the writing.
* Focus on benefits: Emphasized how the platform solves student problems.
* Stronger ending: Summarized the platform's value proposition and impact.

II. LITERATURE SURVEY

[1] The Role of Chatbots in Education

Chatbots appeared in large numbers at the beginning of this century. Interactive technology, often combined with artificial intelligence, is rapidly entering and emerging in the world of online dating. Chatbots are much more than a virtual assistant; organizations and governments use them on websites, apps and messaging platforms to promote products and services. In this article, the authors first introduce the theoretical and historical background, then discuss the use of chatbots as learning assistants, and finally explain the basic steps and challenges of robotics.

[2] Adopting Artificial Intelligence Chatbots to Improve Student Learning in Indian Higher Education

In the age of artificial intelligence, the growing chatbot industry with the demand for smart phones and the use of messaging is well known. Grow as your app grows. Over the past few years, chatbot technology has powered food delivery, finance, and ecommerce. One of the activities that can benefit from the use of these tools in education is education. Education can benefit from the development of chatbots. It increases productivity, communication, learning and business efficiency. New education systems can use this technology to collaborate to solve new problems in education. This case study aims to identify factors influencing the use of chatbot technology to enhance student learning in higher education in India. This study uses multiple methods and uses chatbot technology to collect data in research conducted at some universities in India. The findings are expected to help chatbot developers and universities better understand students' needs while providing them with a platform for discussion and communication.

[3] Android Based Career Guidance Mobile Application

This application can be used by students and parents because it provides all the details of the university such as tuition fees, accommodation costs, eligibility, on campus life, accommodation, scholarship programs, on campus services , rules and regulations etc. It helps students choose colleges in engineering and management in India and abroad based on relevant exam scores, skills and other factors. The app prepares a list of schools based on entrance exam scores, school eligibility criteria and course options. The list of universities is filtered by parameters such as university ranking and aptitude test (AT) for site selection. Aptitude test is based on Multiple Choice Questions (MCQ) and includes vocabulary, multiple sections and general knowledge. The application will help students get the most suitable universities and courses in their field

[4] Chatbot uses artificial intelligence for job training

The intelligence system is divided into two main parts: First, while students' interest is evaluated, the next level is the person's It shows that there are classes and expectations for work that match their abilities. Assessment of students determining their studies in various subjects at SSC (Secondary School Certificate) and assessment of their interest in studying in various fields, establishment of fuzzy methods for analysis. The system is equipped with a level of knowledge that allows it to interpret sentences and make independent decisions in response to questions. The reactive approach involves parsing sentences to extract tokens that can be used to identify the target sentence by comparing it with user input. Additionally, the system uses performance and achievement metrics to help users evaluate their interests, skills, and abilities.

[5] Techie.ai

Techie.ai is a chatbot designed to guide job seekers. It is based on artificial intelligence and provides a strategy to search, create and search for answers to other users' questions. It gives good results to the users by analyzing the questions and understanding their words. Users can submit technical questions via Techie. AI interfaces are designed to interact with robots. User questions and questions from career counsellors will be reviewed and answered. The system makes recommendations based on the user's skills and guides the user to do the right job. Techie.ai helps users choose jobs that best suit their interests and abilities.

III. IMPLEMENTATION

Our career counselling program is designed to provide career guidance, instruction and information, including assessing students' abilities and attitudes, to help them develop and establish realistic long-term academic and career goals. The essence of our consultancy service is to provide students with comprehensive advice, tips and information necessary for their career search.. Our approach integrates the assessment of students' abilities and personalities, facilitating their enhancement and fostering the cultivation of pragmatic academic and career objectives over an extended duration. Within our system, various modules synergistically contribute to the holistic Career Counselling System:

Fig-1: Design-Phase of Web Application

Module 1: Student's Module

The frontend and backend of this model are built using ASP.NET framework written in C# and the database uses Microsoft SQL Server 2014. C# is a powerful and safe language. Development services to help us create Powerful and secure consulting applications for backend instructions supporting ASP.NET. We can use this language to create Windows applications, server applications, XML Web services and other applications. It also includes many code updates for userfriendly code editing. The core of this model is the chatbot functionality built using Google's ASP.NET Conversation Flow API client library.

Fig-2: ACTIVITY Diagram for Student Module

1) When students start applying for career counselling, they will see the home page of the system as shown in Figure 5.
2) Then, students must log in to the system by clicking the login tab on the home page.
3) Then, after clicking the "Login" tab, the login screen will appear where the student must enter credentials such as username and password. Students can register if they have not registered in the system before.
4) After logging in, users can see the home page, which contains the main features and services of the system, such as University Information Section, Competitive Exam Information Section, Quizzes Section, Query Section (QnA), University Predictions and Comparisons, Private Tutoring Bot.

5) When a student enters his college information, he will get various complete information of a college like college information, travel about how and type of education the college has in different fields.
6) When students enter the competition information section, students will be able to see all the information about the competition exams and the user will also be able to download their books or articles.

Module 2: Admin's Module

The front-end and back-end parts of this model are designed using the ASP.NET framework written in C# as a student module, and the database is Microsoft SQL Server 2014.
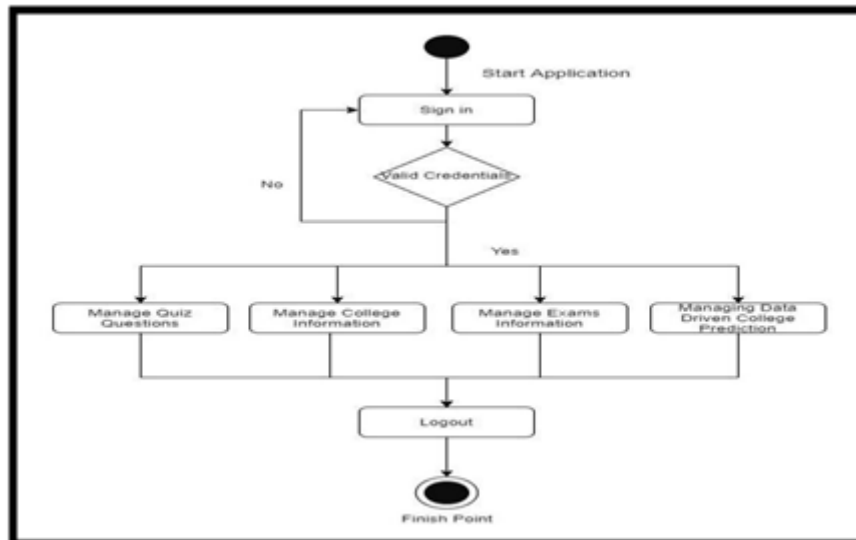
Fig-3: UML's Diagram of Activity for Admin Module

1. When the administrator launches the application form on the website, he will see the system home page as shown in Figure 5.
2. After that, the administrator must enter the system by clicking on the "Login" tab from the main page.
3. Then, after clicking on the "Login" tab, the login ID will appear, where the administrator must enter the credentials, which are the username and password.
4. Once logged in, administrators can see the home page, which includes important administrative functions and services such as managing questions, managing college information, managing testing data, and checking data-driven school predictions and comparisons.
5. When an administrator accesses the "School Information Management" section from here, he can add new schools and update the details of a particular school.
6. When an administrator accesses Contest Management, the administrator will be able to add information about the contest
7. When the administrator accesses the Manage Questions section from here, he can add new questions or edit the questions.
8. By accessing the Admin Profile Driven College Prediction and Comparison section, administrators can manage the university limitation to predict universities accurately.

IV. CONSLUSIONS AND ARGUMENTS

Data design and testing:

Data testing is an important part of software development to ensure the reliability, accuracy, efficiency and security of the system. It involves successful testing of data collection and validation processes to ensure compliance with requirements.

Fig-4: Career Counselling System Data Base Architecture

Consulting project uses Microsoft SQL Server 2014 as database management system. Its robust architecture safeguards sensitive data and facilitates seamless operations. The database schema, visually depicted below, outlines the interconnectedness of tables and relationships, providing a clear understanding of the system's structure. The following pages have been designed and implemented as a "Online Career Counseling System with Chat Robot" web application.

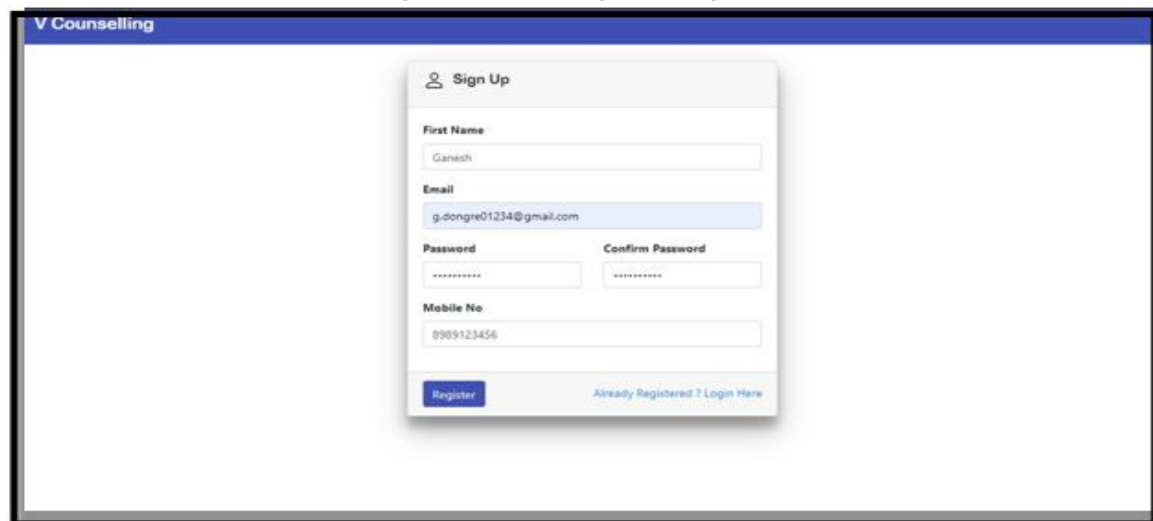Figure 5 : Home Page of the System

Figure 6 : Student Module for Sign-up

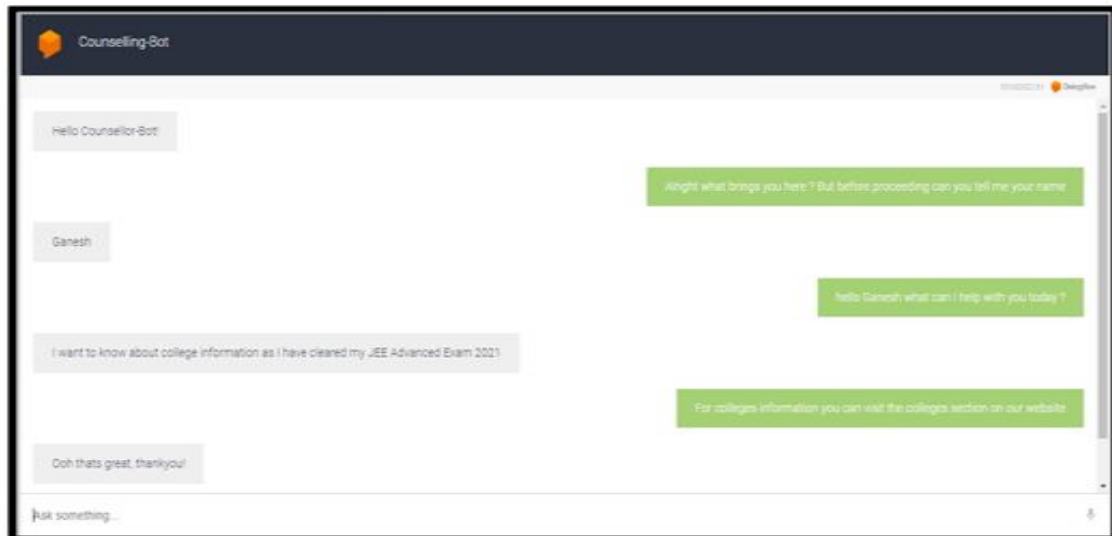
Figure 7 : System Home Page Module
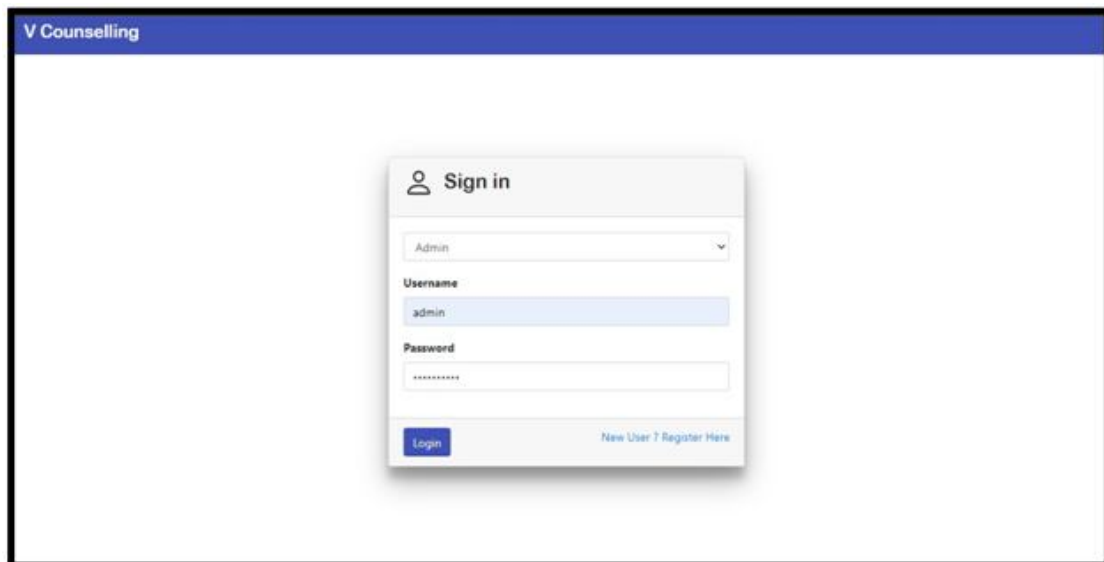
Figure 8 : Consolation chatbot of Model

Figure 9 : Sign Page for Admin Module

Figure -10, Admin Home Page Module

VI. OUTCOMES

Standing at the precipice of adulthood, one of the most pivotal decisions young people face involves charting their professional path. Choosing the wrong course can have significant ramifications, impacting not only immediate academic trajectories but also long-term career trajectories and job satisfaction. Recognizing this critical juncture, we present a ground breaking solution: a comprehensive web-based platform designed to illuminate educational and professional options for young minds. This intuitive, user-friendly platform serves as a one-stop repository of in-depth information regarding diverse educational pathways and associated career trajectories. Students gain access to detailed descriptions of various fields, encompassing not just job titles but also the day-to-day realities, challenges, and potential rewards associated with each profession. Interactive assessments and self-discovery tools further empower students to identify their strengths, passions, and learning styles, facilitating informed career exploration. To bridge the gap between information and action, we leverage the power of conversational AI.

Students interact with a sophisticated chatbot companion that acts as a personal mentor, readily addressing their queries, analyzing their choices, and offering personalized guidance. From navigating the intricacies of college applications to exploring niche career options, the chatbot provides continuous support and tailored recommendations throughout the decision-making process. Recognizing that innovation necessitates unceasing refinement, we remain committed to continual improvement. The chatbot undergoes constant evolution and enhancement through collaboration with educators and industry experts. This dynamic approach ensures the platform's information remains current and relevant, providing students with the most accurate and actionable insights available. While the initial development phase presented its own set of challenges, we successfully overcame these hurdles through collaborative efforts and unwavering dedication to our vision. Now, we stand poised to empower the next generation of talented individuals on their journey towards fulfilling and meaningful careers. Our platform equips young people with the resources and knowledge they need to confidently navigate the complex landscape of career exploration. Let this platform be your guide and compass, paving the way for informed choices and a future brimming with success and personal satisfaction. This revised version uses formal language, avoids contractions, and emphasizes the professional nature of your solution. It also clarifies the platform's features and benefits while maintaining a persuasive tone.

Some tips for future work:

1. Migrating from LUIS to CLU: While LUIS is an important tool for building chatbots, its scalability and customization are limited. Moving to Microsoft's Cognitive Language Understanding (CLU) could give chatbots more growth and scaling options.
2. Additional features: The chatbot now provides basic information about the school. But it can be customized to include features like event alerts, personalized alerts, and class recommendations.
3. Database expansion: The accuracy of the chatbot depends on the data it can access. By expanding their knowledge, chatbots will eventually be able to provide more and more accurate information.
4. Integrating the virtual assistant into the official website of the university: By connecting the chatbot to the official website of the university, the ease and practicality of the application can be better ensured. Students and staff can access the chatbot directly from the website without having to navigate to another page.

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